

2010 SGR Roundtable

# TERM-Lite: Building Better Technology for the Industry's Use

## Study Overview



Chicago, IL  
July 2010

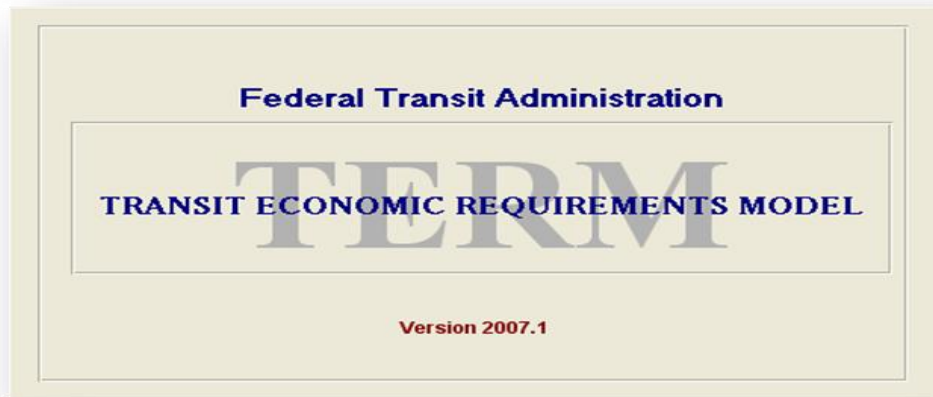
# TERM – FTA's Capital Needs Analysis Tool

## ▶ Transit Economic Requirements Model

- Developed to provide analysis for biannual Conditions & Performance Reports to Congress
- Provides analysis of transit investment scenarios at National level
  - ✓ State of Good Repair backlogs
  - ✓ Average condition of assets by category
  - ✓ 20 to 50 year projections of capital investment needs
  - ✓ Studies of alignment between apportionment and needs
- Extensive database of industry assets
  - ✓ Comprehensive NTD vehicle data
  - ✓ Asset lists from 40 of the largest agencies
- \$5 million invested since 1995

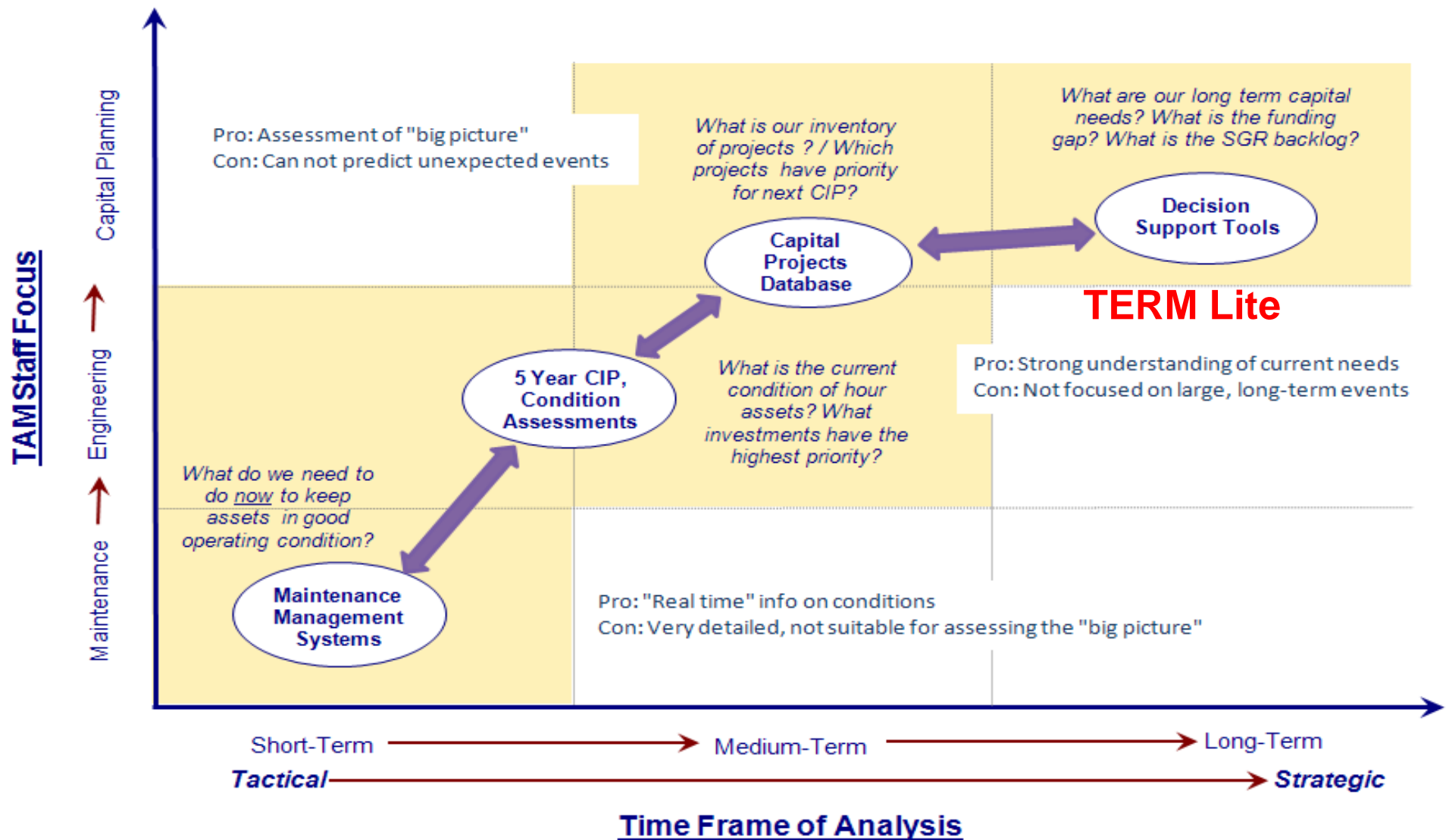
# TERM – Local Investment Tool Edition (Lite)

- ▶ TERM For Agency Long Range Capital Planning
  - Accepted analysis tool for Capital Improvement Planning
  - Analysis relies on agency provided asset inventories
  - Calculates standard “state of good repair” metrics
  - Free through FTA website

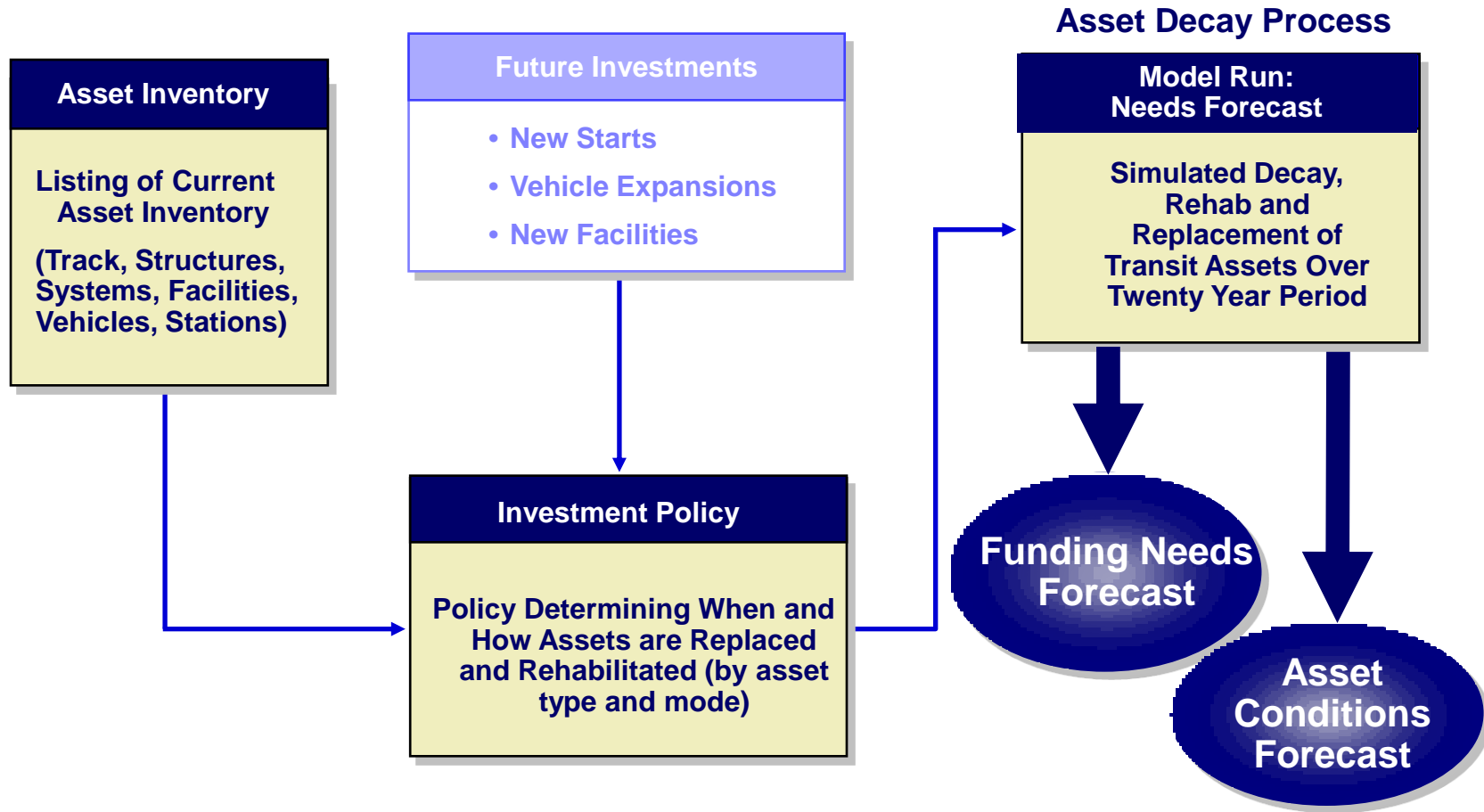


Serving suggestion only,  
beverage is not included  
and may have harmful effects  
if consumed during financial  
planning

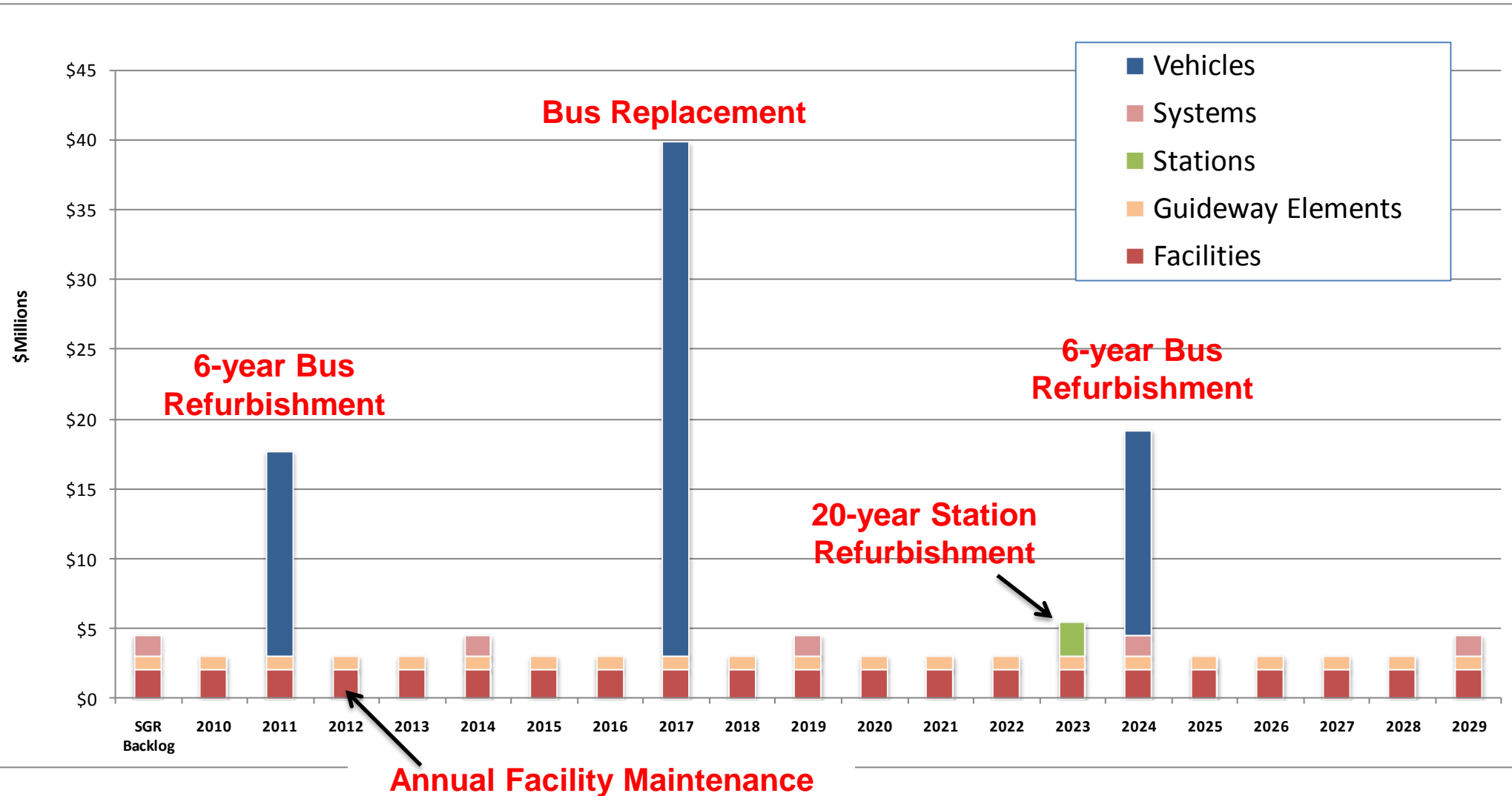
## Transit State of Good Repair Continuum



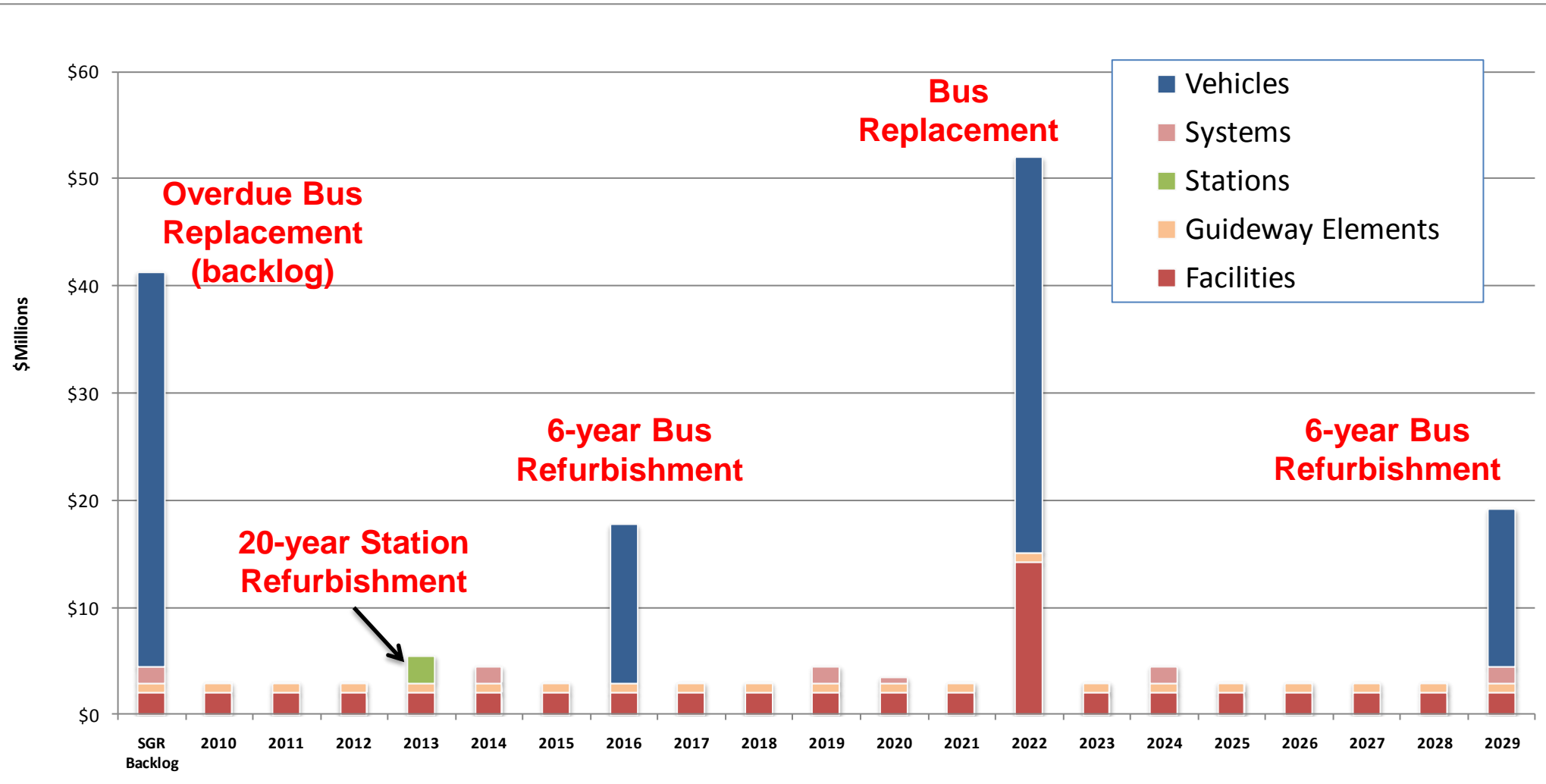
# TERM Lite Overview



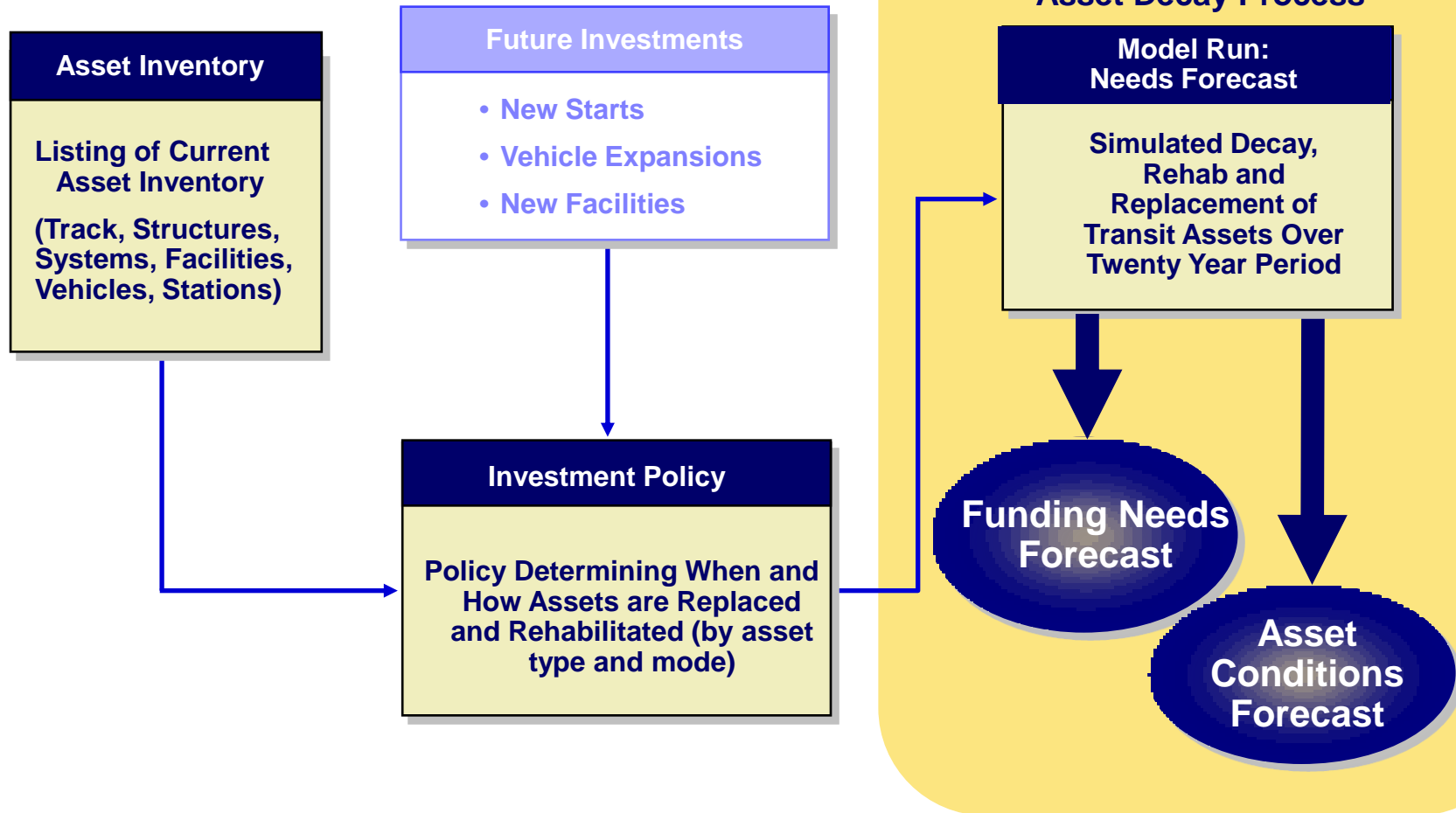
# Example: New 100-Bus Agency started in 2004



# Example: New 100-Bus Agency started in 1994



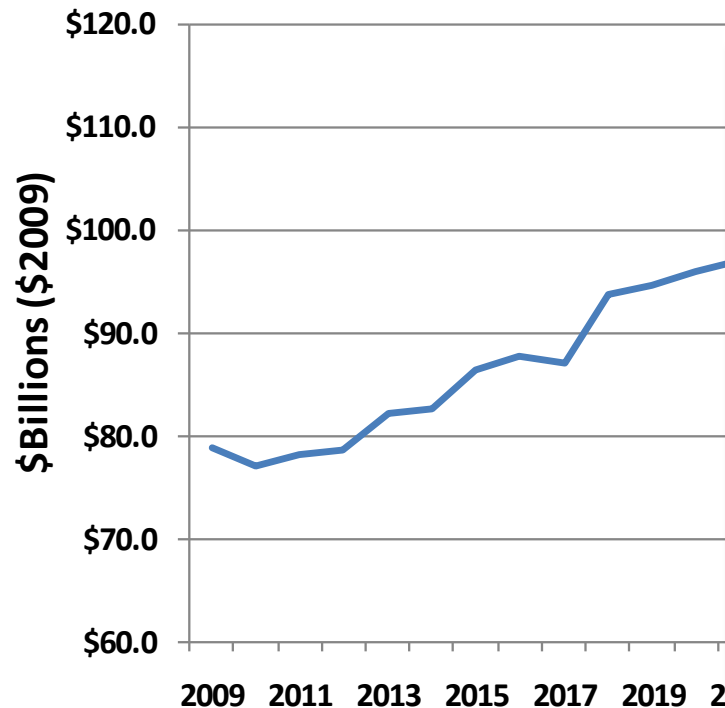
# TERM Lite Analysis Capabilities



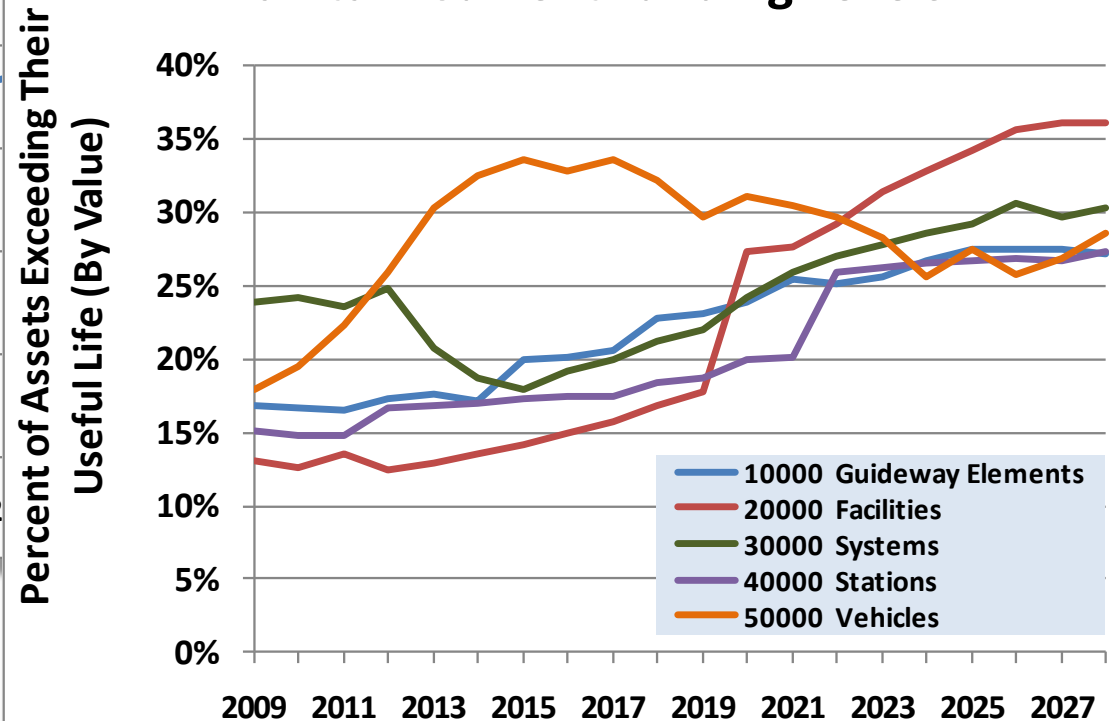


# Example: Reinvestment Level Impacts

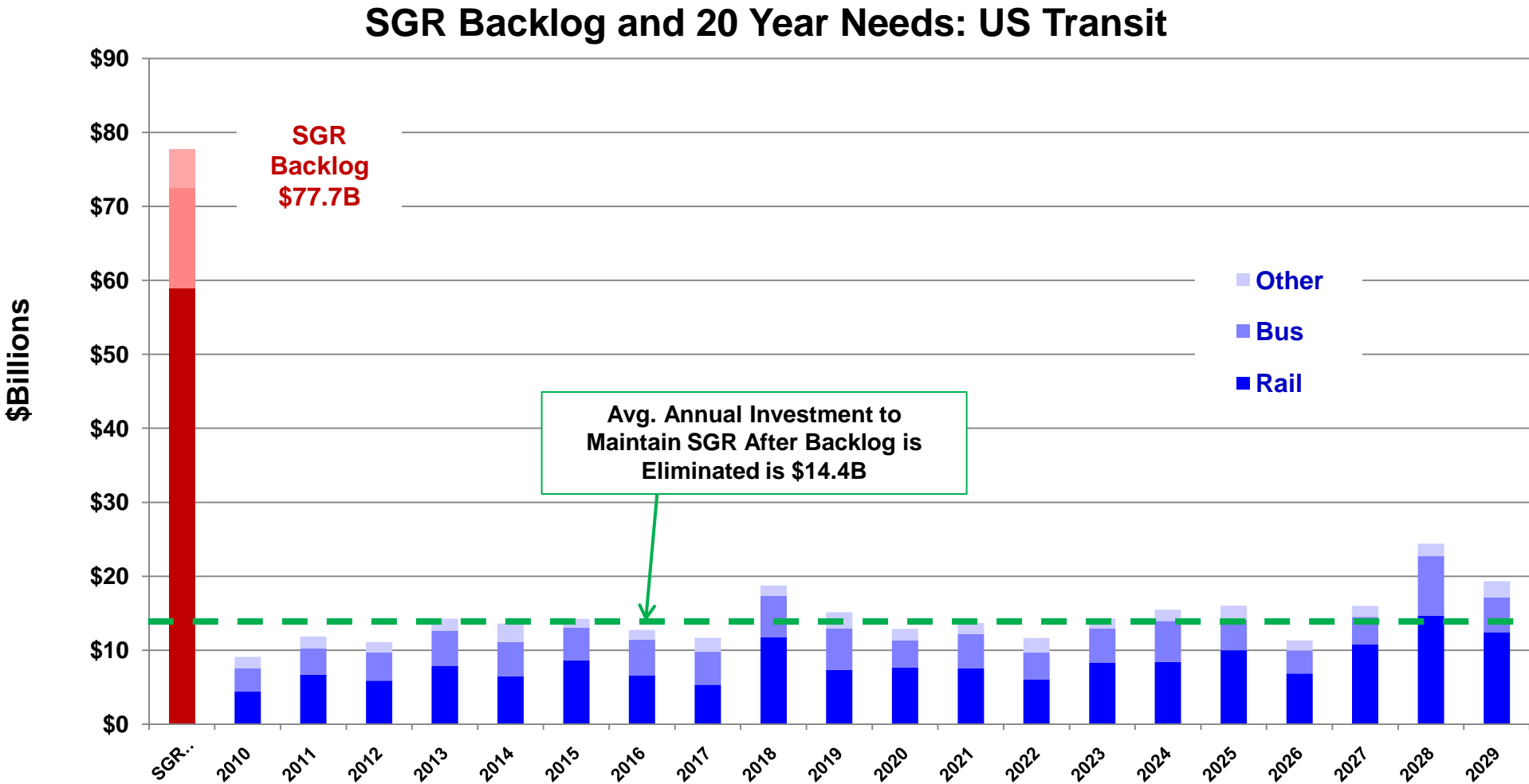
**SGR Backlog Projection:  
Maintain Current Spending Scenario**



**Over-Age Forecast by Asset Category  
Maintain Current Funding Levels**

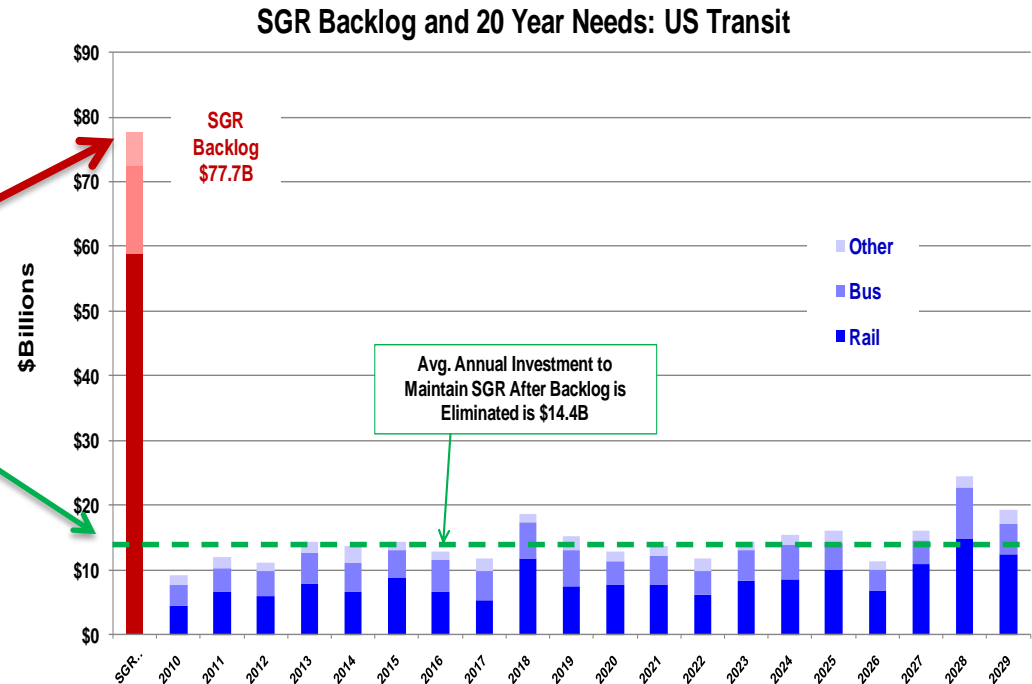


# Example: Capital Reinvestment Needs Forecast



# Concept of Backlog Ratio

- ▶ The absolute dollar value (\$77.7B) provides a measure of the **backlog**
- ▶ **Normal replacement** (\$14.4B) is measure of average reinvestment needs with no backlog
- ▶ Ratio of **backlog** to **normal replacement** provides years of backlog



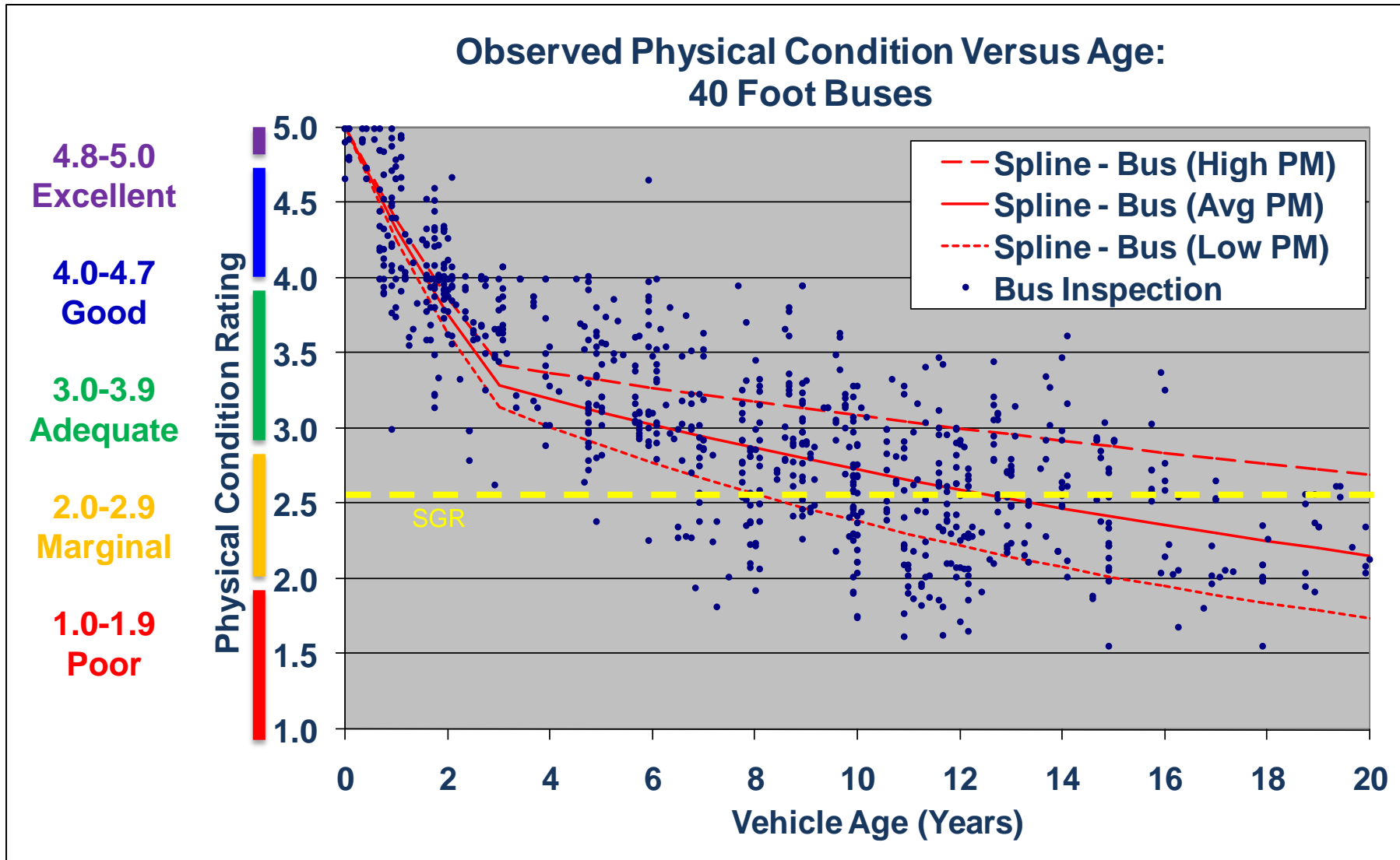
$$\text{Backlog Ratio} = \frac{\text{SGR Backlog}}{\text{Ave. Replacement}} = \frac{\$77.7\text{B}}{\$14.4\text{B}} = 5.4$$

- ▶ Measure of SGR backlog in context of normal reinvestment

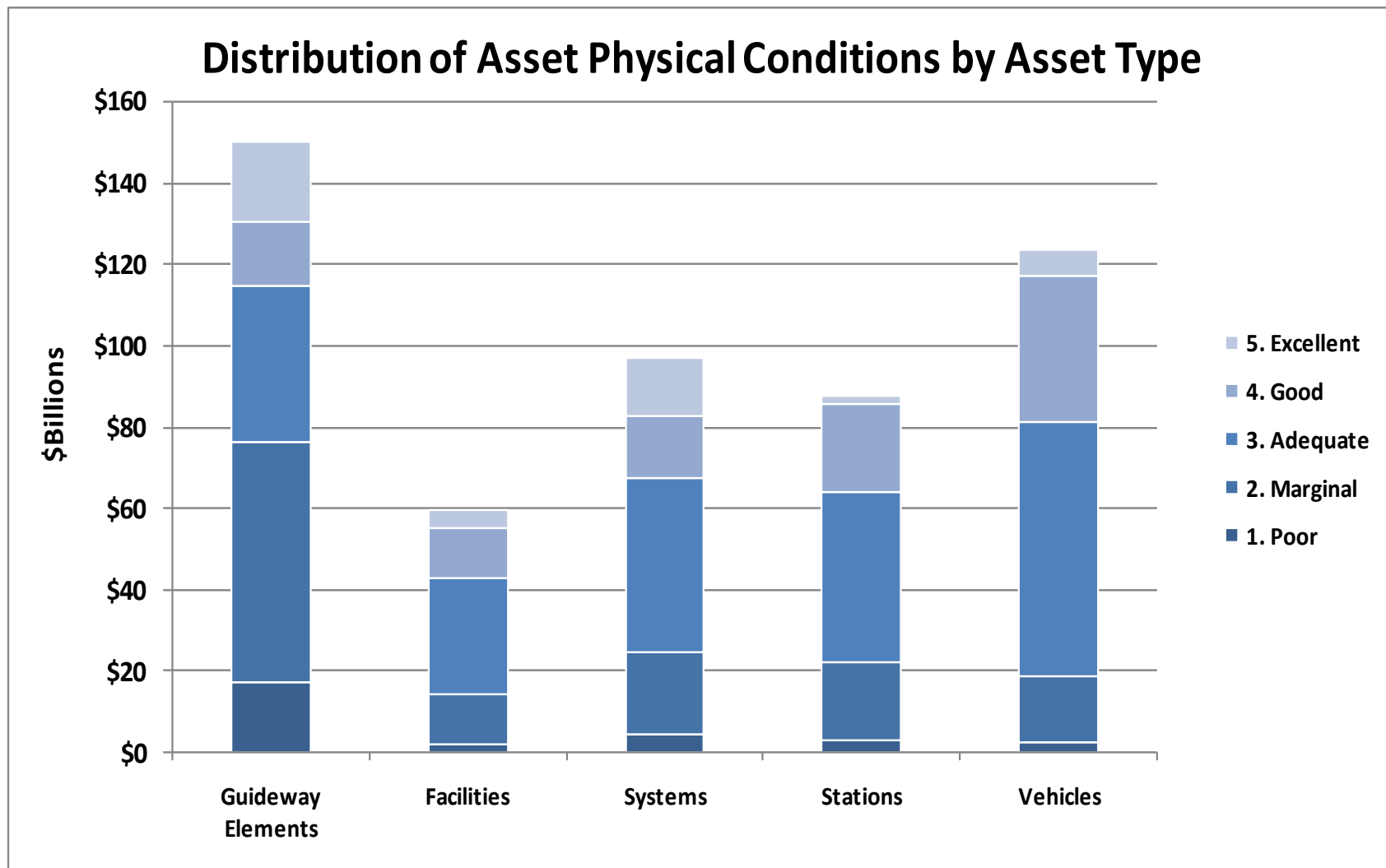
## Example: SGR Backlog Ratios

- ▶ National SGR Assessment ..... 5.4 years
  - Rail Only ..... 7.2 years
  - Non-Rail Only ..... 3.0 years
- ▶ Big 7 Rail Mod Study Agencies ..... 8.5 years
  - Rail Only ..... 9.4 years
  - Non-Rail Only ..... 3.6 years
- ▶ National excluding Big 7 ..... 3.3 years
  - Rail Only ..... 3.9 years
  - Non-Rail Only ..... 2.9 years
- ▶ Minneapolis Metro ..... 0.7 years

# TERM Asset Condition Scale

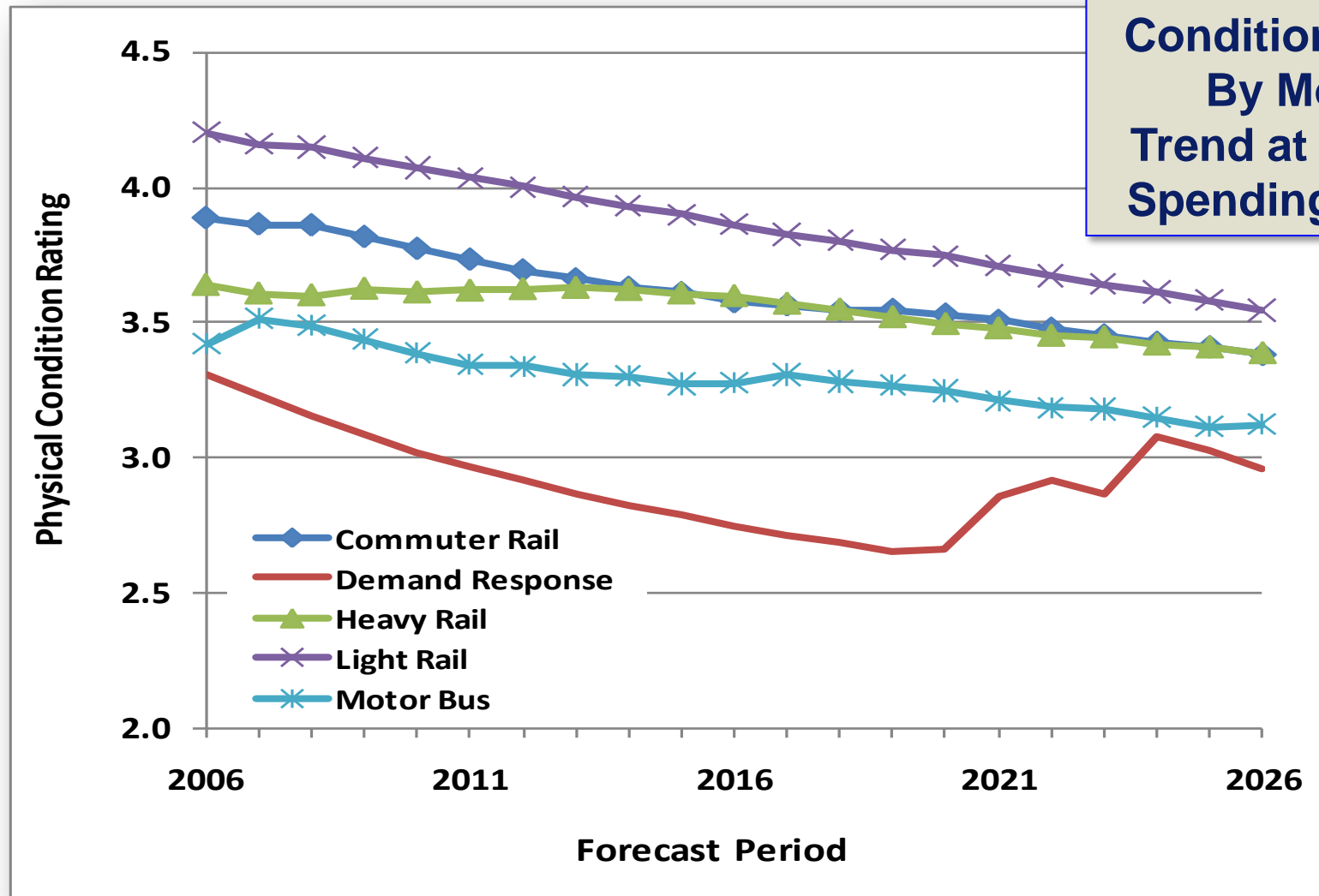


# Example: Asset Condition Report

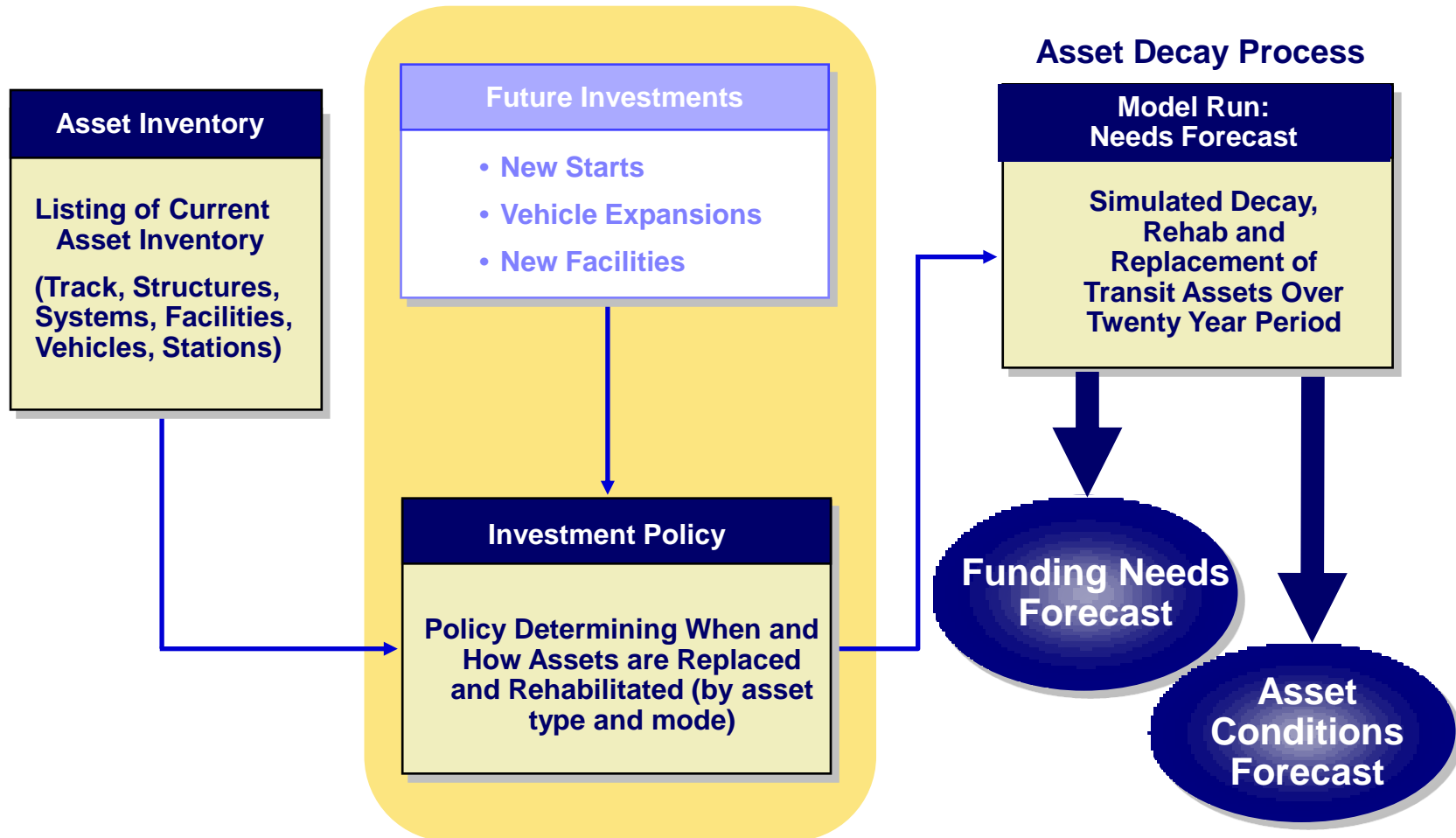


# Example: Asset Condition Forecast

Ave. Physical  
Condition Rating  
By Mode:  
Trend at Current  
Spending Levels

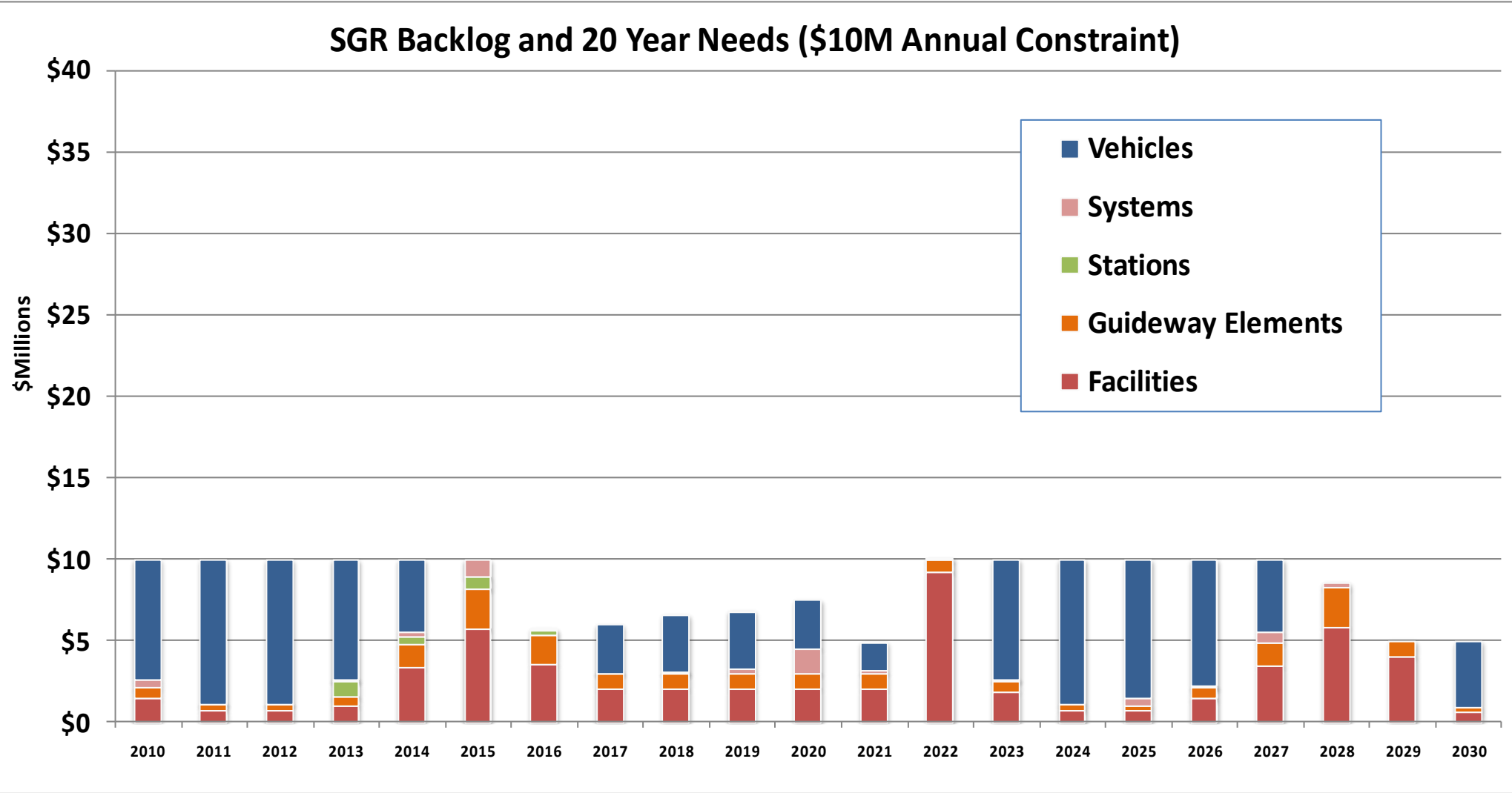


# TERM Lite Investment Constraints

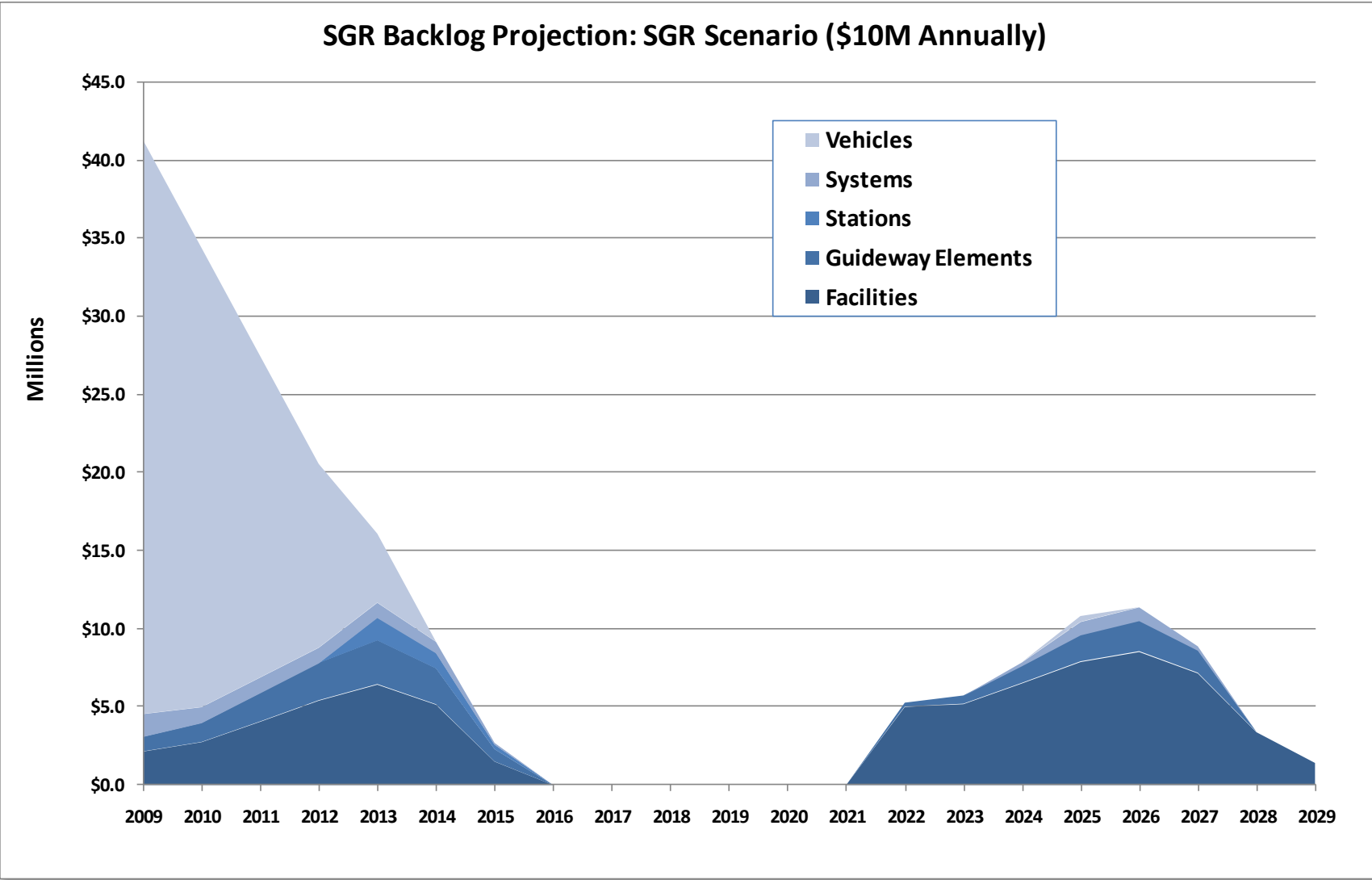




# Example: New Bus Agency in 1994 with Constrained Budget

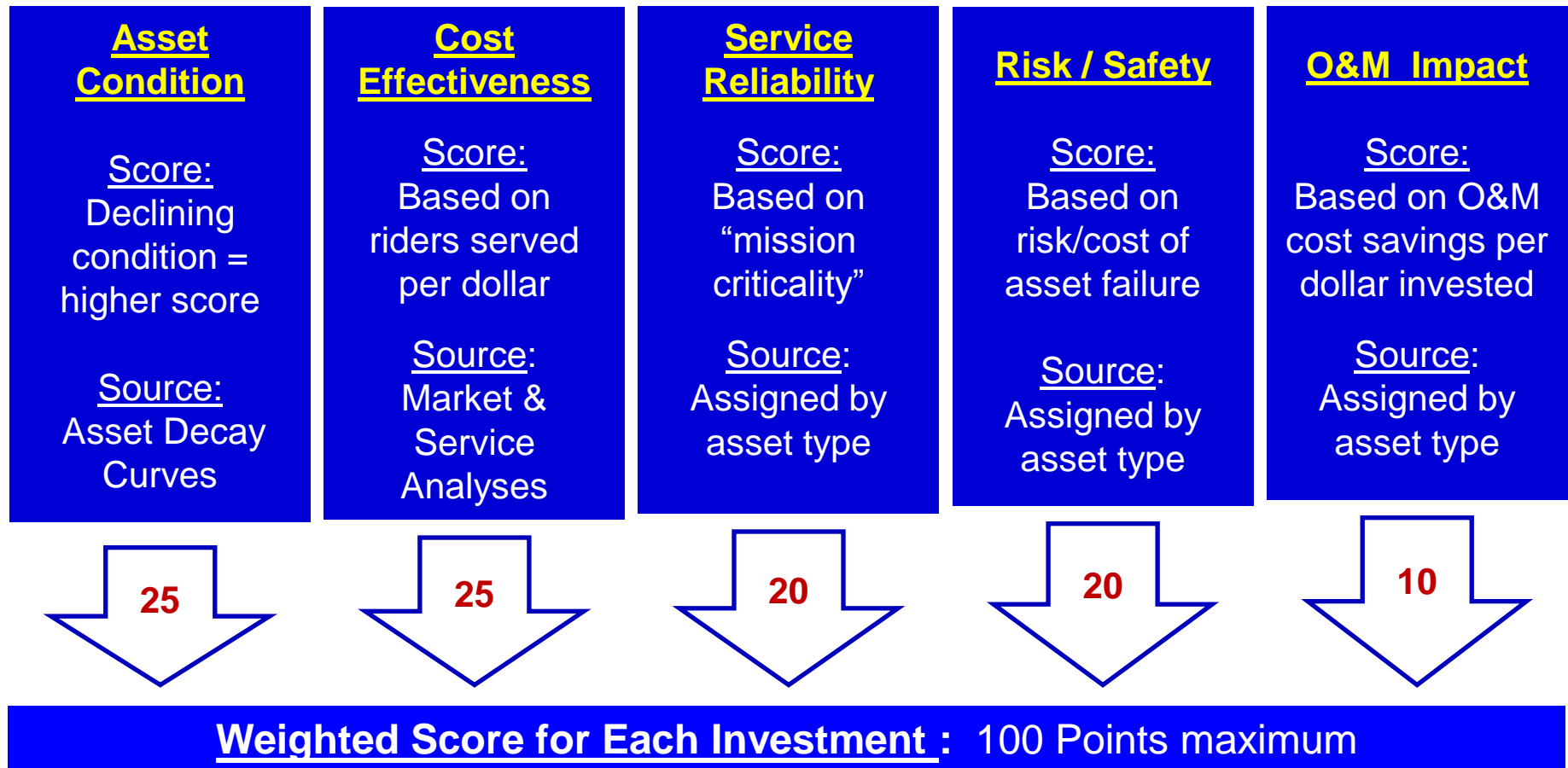


# Example: New Bus Agency in 1994 - \$10 Million Constraint

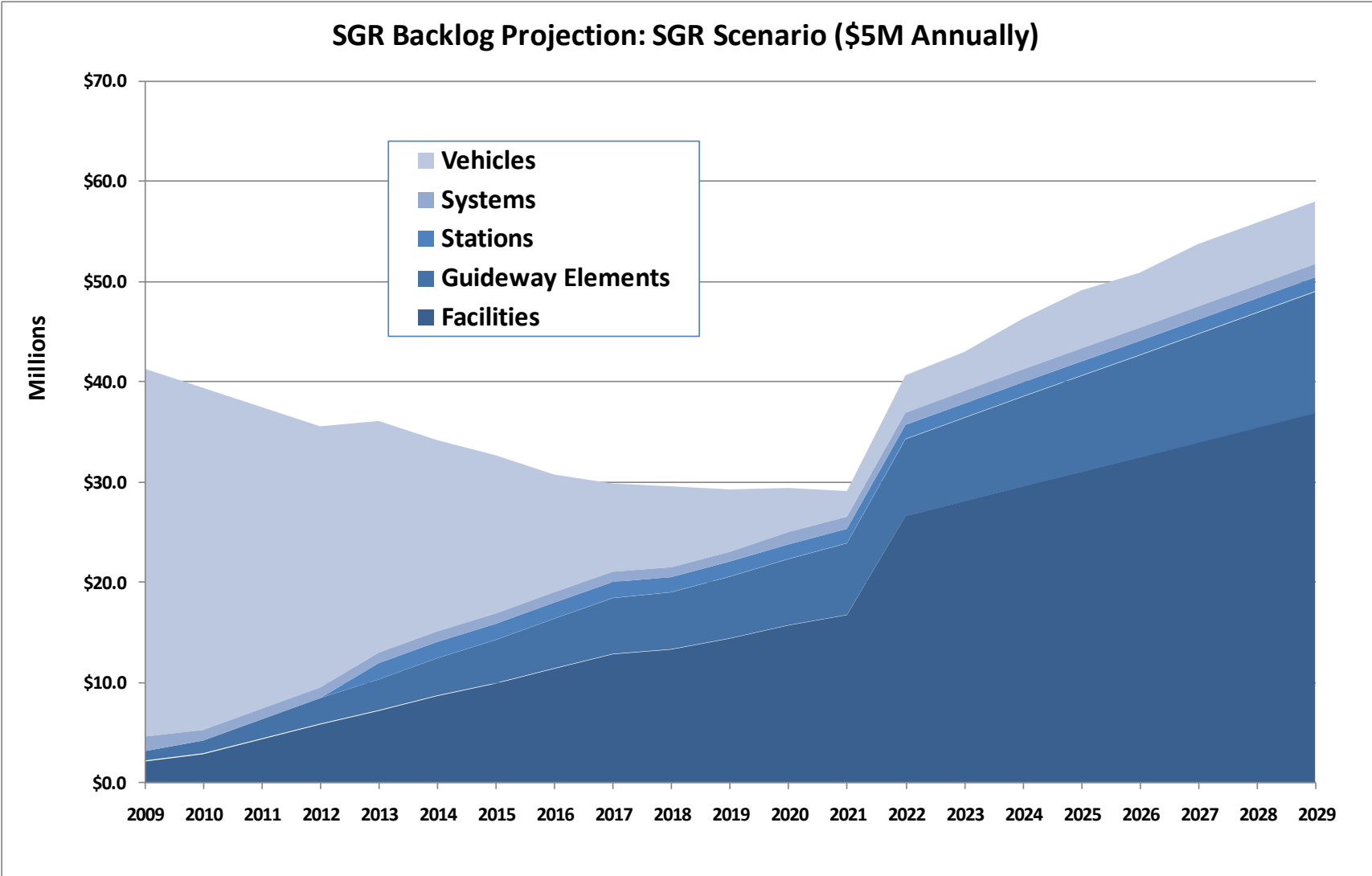


# Implementing Constraints – Prioritizing Investments

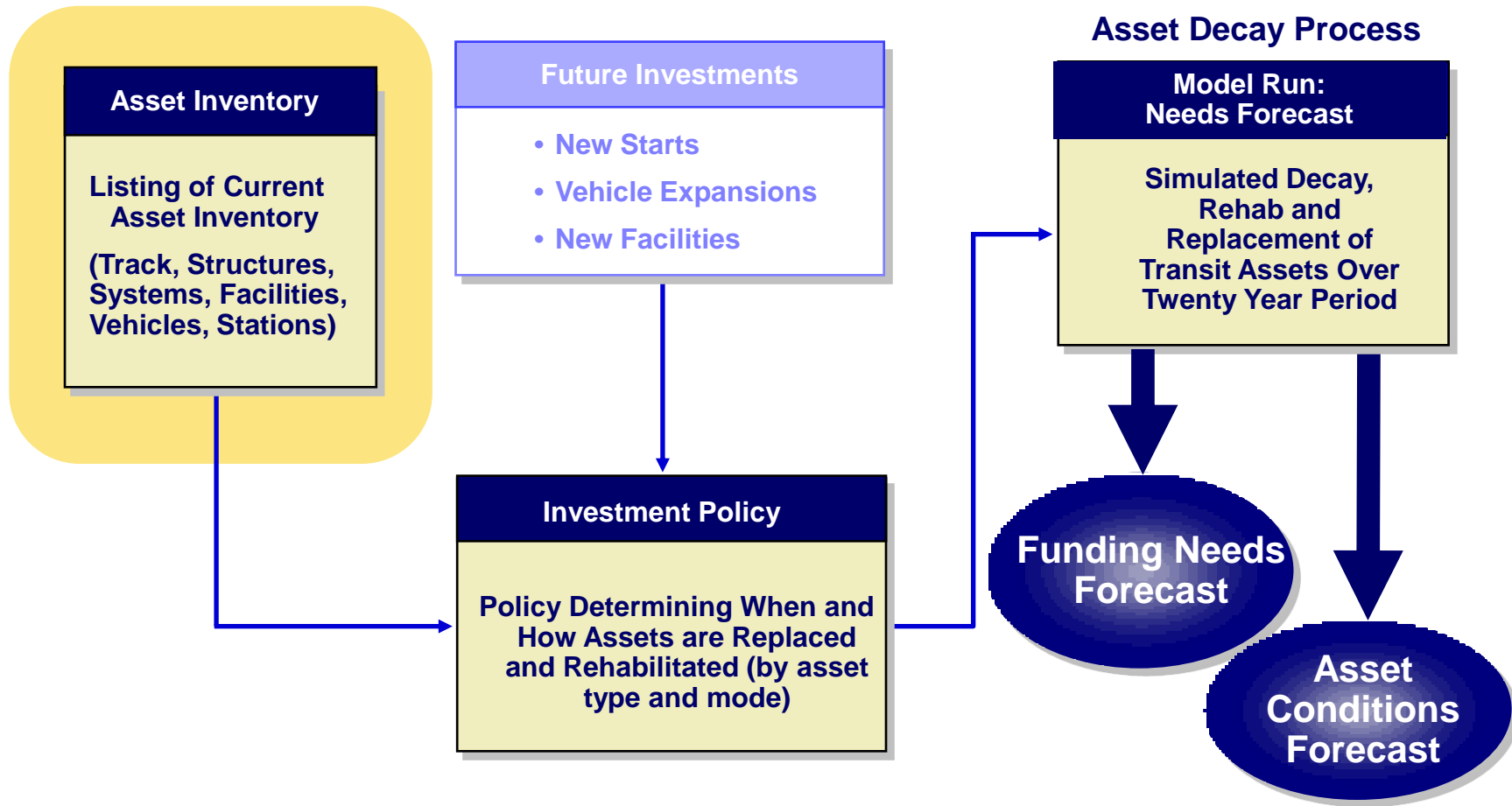
Points assigned to investments based on scoring by 5 investment criteria



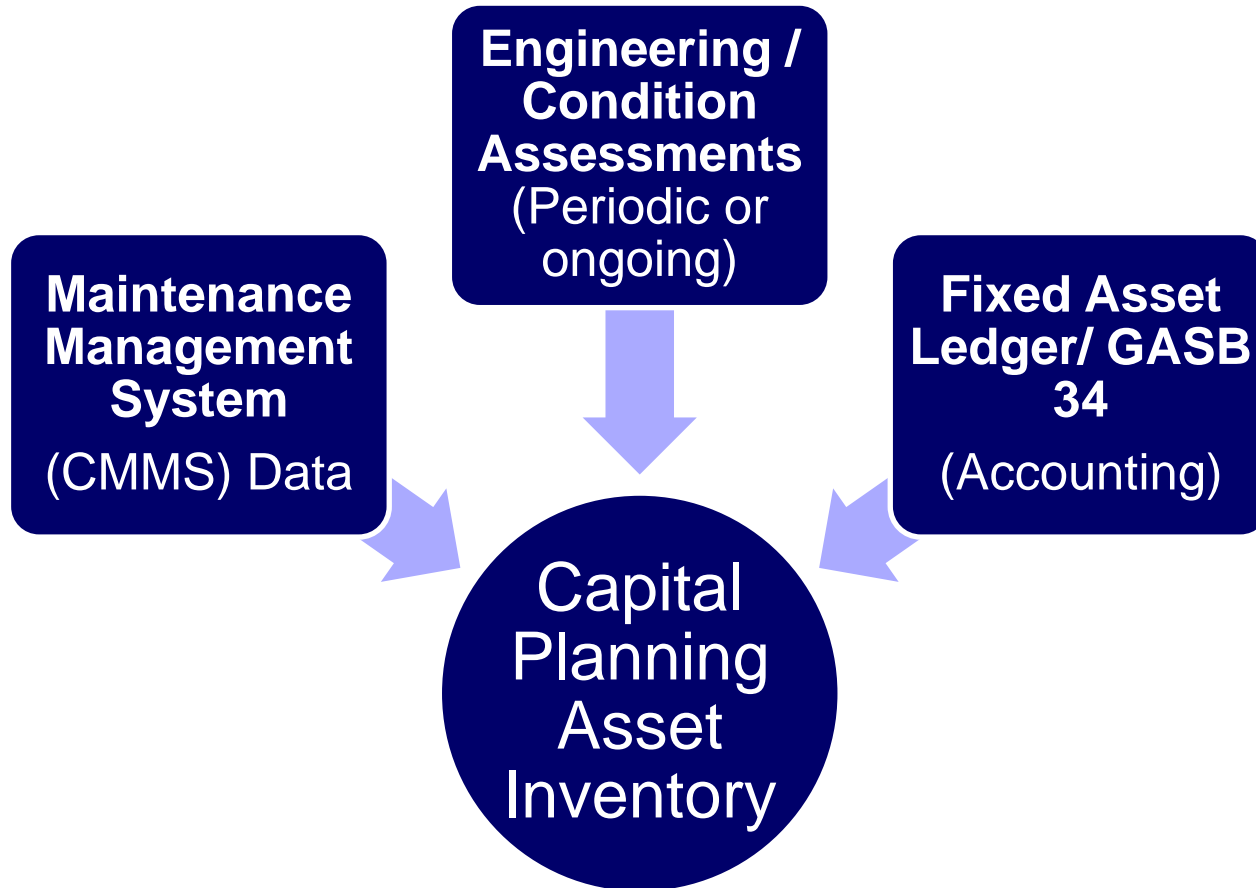
# Example: New Bus Agency in 1994 - \$5 Million Constraint



# TERM Lite Asset Inventory Development



# Asset Inventory Development



# Asset Inventory Structure

► Inventory records document each asset's type, acquisition date, replacement cost, quantity, owner agency and mode

► Inventory uses a hierarchical structure with roughly 400 asset types

Category	Sub-Category	Element
Guideway Elements	Guideway	At Grade
		Elevated Structure
		Elevated Fill
		Underground
	Trackwork	Retained Cut
		Direct Fixation
		Ballasted
		Embedded
	Special Structures	Special
		Yard
		Bridges
		Dedicated Lanes
Facilities	Bus Guideway	Turnarounds
		Elevated Structure
		Subway
	Buildings	Administration
		Maintenance
		Passenger
		Terminals
	Storage Yard	Rail
		Bus
	Equipment	Computers/Software
		Furniture
		Maintenance
Systems	Major Shops	Rail
		Bus
	Train Control	Wayside Train Control
		Automated Train Control
		Centralized Train Control
		Roadway Crossings
	Electrification	Interlockings
		Catenary
		Substations
		Breaker House
	Communications	Contact Rail
		PA Systems
		Radio
		Base Radio Stations
	Revenue Collection	Mobile Radios
		In-Station
		On-Vehicle
		Central Revenue Collection
Stations	Building	At-Grade
		Elevated
		Subway
		Elevators
	Parking	Escalators
	Pedestrian Walkway	
Vehicles	Non-Revenue Vehicles	

# Example: Inventory Hierarchical Structure

